

**CASE STUDY # 054**

**CHEMICAL WASTEWATER TREATMENT PLANT  
QUICK UPSET RECOVERY**

**SUBJECT:**

Upset recovery of a biological wastewater treatment system at a chemical manufacturing facility.

**PRODUCT APPLIED:**    **MICROCAT®-XR Microbial Hydrocarbon Degrader**



**TREATMENT SYSTEM:**

1. Wastewater Flow:    5703 m<sup>3</sup>/d
2. Activated Sludge Bioreactor
3. Secondary clarifiers
4. Pressure sand filters

**OBJECTIVE:**

The treatment objective was to quickly re-establish the wastewater treatment biomass following a toxic event, which "wiped out" the biomass in the bioreactor and caused a manufacturing plant shut down.

**PROGRAM:**

**MICROCAT-XR** was used to ensure the long-term stability of the biomass against toxicity recurrence. A 20-day application program of **MICROCAT-XR** was instituted. The first 2 days of the program used 45 pounds/day of **MICROCAT-XR** to reduce the toxicity and reseed the bioreactor. On days 3 through 10, 30 pounds/day were added and on days 11 through 20, 15 pounds/day were added. A total of 500 pounds of **MICROCAT-XR** was used during the program.

**RESULTS:**

After 2 days of the program, toxicity in the bioreactor, as measured by biomass oxygen uptake rate, was greatly reduced. The toxicity reduction in the wastewater treatment system allowed for restart of some manufacturing processes. After 10 days of the application program, the bioreactor was returned to full-scale treatment operation and manufacturing returned to 100% production capacity. Additional oxygen uptake and microscopic examination show continued increased biological activity in the bioreactor.

The **MICROCAT-XR** application program successfully re-established the biomass population and increased its long-term activity and performance. **MICROCAT-XR** is maintained in stock on-site for upset recovery.

